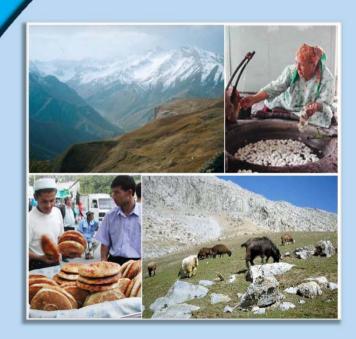
Sustainable Development Strategy for Central Asian States (SDS CA) covers Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and serves as a long-term policy planning tool. SDS indicates the goal of Central Asian States is creation of common political, economic, cultural environment to provide a basis for SD as well as conservation of the favorable environment for current and future generations of Central Asian countries. SSDS CA serves as a common strategy for creation of adequate institutional, economic and legal environment to achieve SD in this sub-region and to improve interstate policy of CA for SD. The document was prepared in a participatory process in consultation with the Ministries of respected concerned Line countries. intergovernmental organizations, international organizations, and civil society organizations.



Sustainable Development Strategy for Central Asia

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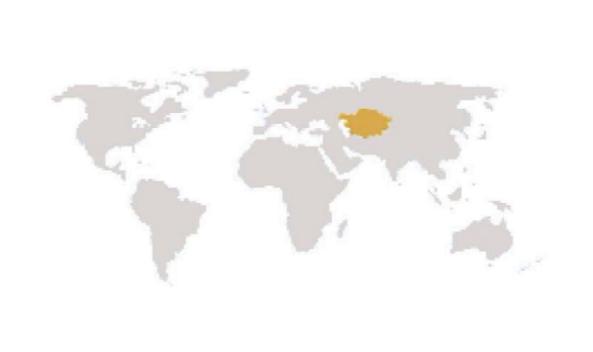
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Nowadays, in Central Asian countries, there is a process of this strategy agreement; and then will be made a decision on submission of this document to Executive Committee of International Fund of Aral Sea Rescue for approval.

SUBREGIONAL SUSTAINABLE DEVELOPMENT STRATEGY FOR CENTRAL ASIA

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Sub-regional Sustainable Development Strategy for Central Asia (DRC - ROAP) - ISBN : 978-92-807-2979-5 , Job Number : DRC/1111/BA

FOREWORD

The idea of sustainable development is broadly recognized in Central Asia as a result of perception by humankind the limitation of natural-resource capacity for economical growth and also the oncoming threat of irreversible negative changes in environment.

Central-Asian region is characterized by heightened vulnerability of natural ecosystems, dependence of political stability and socio-economical development on solution of ecological problems. The brightest examples, confirming these facts are Aral Sea crisis, problems of transborder waterways contamination; increasing ecosystems' degradation and desertification.

Since Central Asian countries obtained their independence, many unsolved ecological issues, which were beyond the scope of national problems, and having the regional features, became more sharp.

In this connection, it is of a great importance nowadays to focus the attention on right choice of regional priorities, on their comprehensive evaluation, on determination of current problems, on analysis of cause-effect connection between them, and, what is more important, on making conclusions and elaboration of recommendations, which will contribute to making of appropriate decisions.

Presently, it may be ascertained with confidence that in Central Asian countries, including in framework of interstate collaboration, was conducted a great work on creation of legislative basis, on elaboration and acceptance of development programs and strategies practically in all economical sectors. With every next year, the positive changes in socio-economical sphere become more evident, and the increasing attention is paid to solution of issues on environment protection.

Now, it is very important to give the appropriate evaluation of accepted documents coordination. Recognizing of significance of decisions and understanding of these issues is necessary for rational use of natural resources in the region, for reduction of negative impact on the environment, and for assurance of ecologically safe and socially stable conditions for future generations.

The integration processes are of a special significance for solution of current tasks. Regional integration should be considered as indispensable condition for economical growth, as pledge of sustainable political development and safety of countries in the region, including their suc-cessful joining to global economical community; that is especially actual in complicated con-text of current processes in modern world.

At the same time, it is necessary to note that the globalization processes and integration of Central Asian countries into world economy demand these countries to make more active the sustainable development processes on regional level.

Taking into consideration the scale of crucial ecological crisis in the region, the Heads of Central Asian countries accepted in 1997 the Almaty Declaration, in which they expressed their aspiration for elaboration and realization of unique sustainable development strategy. In accordance with decision of Interstate Sustainable Development Commission (ISDC) of Central Asia and by financial and scientific-methodical support of UNEP Regional Resource Center of Asia and Pacific Region, this strategy was prepared by Scientific Information Center (SIC ISDC).

This Subregional Sustainable Development Strategy (SSDS) of Central Asia presents the well-founded directions and general approaches of Central Asian countries to formation of favorable legislative, institutional, economical, informational and other conditions for achievement of sustainable development goals in the region.

We believe that SSDS will be very useful document for government, non-governmental, regional and international organizations by elaboration of coordinated policy and by realization of action plans on environment protection and sustainable development.

ISDC expresses its gratitude to Central Asian countries for contribution of national ministries, agencies and civil society institutions to preparation of this document.

ISDC expresses also its thankfulness to UNEP Regional Resources Center of Asia and Pacific region for consultative, scientific-methodical and financial support of process on preparation of Subregional Sustainable Development Strategy of Central Asia.

Chairman of ISDC Director of State Agency on Environment Protection and Forestry within Government of Kyrgyz Republic

A. A. Davletkeldiev

MESSAGE FROM THE EXECUTIVE DIRECTOR UNITED NATIONS ENVIRONMENT PROGRAMME

The Central Asian region comprises five countries: Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan and Republic of Uzbekistan. The region is endowed with extensive natural resources, and shared historical and cultural identities. Countries in Central Asia encounter a number of common socio-economic and ecological challenges to be tackled for the sustainable development. Upon requests of the governments and intergovernmental organization, UNEP has assisted with preparation of the Sustainable Development Strategy for Central Asia. The strategy was prepared in a consultation process at the national and subregional levels with the participation of governments and civil society organizations, and Interstate Sustainable Development Commission (ISDC).

The SSDS CA covers the issues related to transition of Central Asia towards sustainable development, strategic directions of sustainable development, and the means of implementation. The goals, long-term objectives and the principles of sustainable development are provided in the report. The long-term objectives identified are: achieve sustainable economic development; social security; achieve environmental stability; promote integrated water resources manage-ment; create mechanisms for energy security; conservation of natural and cultural heritage; and promotion effective management. Means of implementation recommended in this strategic document include institutional collaboration, mobilization of financial resources and its effective management, and the monitoring and evaluation.

I hope that the strategies and action plans recommended in this report would be useful to policy and decision makers in their pursuit of responses to sustainable development challenges at regional, national and local levels. UNEP gratefully acknowledge the technical support provided by Scientific Information Centre (SIC) of ISDC Central Asia and the funding support provided by the Norwegian Government in the preparation of the strategy.

United Nations Under-Secretary-General and Executive Director United Nations Environment Programme Achim Steiner

ACKNOWLEDGMENT

Sub-regional Strategy for Sustainable Development for Central Asia (SSDS CA) is a joint vision and an effort of participating countries to set up a common goals in addressing the challenges of environment for sustainable development. This document is formulated as a result of a passion and continuous commitment of countries to tackle the trans-boundary environmental problems in the region.

The NSDS (National Sustainable Development Strategy) Project Secretariat of the Regional Resource Center of Asia and the Pacific of the United Nations Environment Programmes (UNEP) at the Asian Institute of Technology (AIT/UNEP RRC.AP) acknowledges the considerable dedication of Governments, Ministries of Environment, Planning, Economy and Fi-nances and Foreign Affairs, interstate organizations, international organizations as well as non-governmental organizations of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbeki-stan, to elaborate this Strategy with their valuable inputs.

The NSDS Project Secretariat expresses truthful gratitude to the Scientific Information Center of the Interstate Council for Sustainable Development for leading the process of comprehensive consultations with interested parties and incorporation of ideas, suggestions from all stakeholders of Central Asia in one document. We believe that the SSDS CA will be a very useful reference for a long-term, medium term and short term actions and will motivate for the new projects. We look forward for the innovations and systematic approaches in the follow-up implementation arrangements of SSDS CA

The NSDS Project Secretariat further expresses heartfelt appreciation to the Royal Government of Norway for the technical and financial support and cooperation in the consultation process for NSDS project in Asia and the Pacific Region.

NSDS Project Secretariat

Surendra Shrestha Subrato Sinha Aida Karazhanova Saule Yessimova Batyr Hadjiev

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LIST OF ABBREVIATION

ADB Asia Development Bank

CA Central Asia

CACO Central Asian Cooperation Organization

CACI Central Asia Countries Initiative on Sustainable Land Management

CAR Central Asian Region

CAYEN Central Asian Youth Environmental Network

CEP Caspian Environmental Program
CIS Commonwealth of Independent States

CS Civil Society

ECA Eastern Europe, Caucasus, Central Asia

ECONET Ecological Network

EEC European Economical Community
EIA Environmental Impact Assessment
EurAsEC Eurasian Economic Community
GEF Global Environmental Facility
GEO Global Environment Outlook
GIS Geographic Information System
HDI Human Development Index

HIV/AIDS Human immunodeficiency virus / Acquired Immunodeficiency Syndrome

HPS Hydropower station

IBRD International Bank for Reconstruction and Development

ICWC Interstate Commission for Water Coordination of Central Asia

IFAS International Fund for Saving the Aral Sea

IMF International Monetary Fund

ISDC Interstate Sustainable Development Commission

IWRM Integrated Water Resources Management

NAP National Action Plan

NEAP National Environmental Action Plan NGO Non-governmental Organization

NSDC National Sustainable Development Commission

OSC Official Steering Committee ASPB-2 Aral Sea Basin Program-2 Phase

REAP Regional Environment Protection Action Plan

RES Renewable energy sources

SCO Shanghai Cooperation Organization

SD Sustainable development

SDMS System of Decision Making Support

SIC Scientific Information Center

SSDS Subregional Sustainable Development Strategy

UNDP United Nations Development Program
UN EEC UN European Economical Commission
UNEP United Nations Environment Program

UNEP/RRC.AP Regional Resource Center for Asia and the Pacific

WB World Bank

WBO Water Basin Organization

WSSD Word Summit on Sustainable Development

WTO World Trade Organization

GENERAL INFORMATION ON CENTRAL ASIA

The countries of **Central Asia** are located in the central region of the Eurasian continent (in latitude 36 - 56 North and in longitude 46 - 88 East). Central Asia includes the territories of following republics: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, sharing borders with the Russian Federation, China, Afghanistan and Iran.

Sovereignty of CA countries was declared after the breakup of the USSR in 1991.

The **Territory of CA occupies** more than 4 millions km² of land area.

The **Population of CA** is above 59 millions peoples; with the average density approximately 15 peoples per km².

Land surface: 4/5 of territory in the CA region is characterized by broad valleys, with a large percentage of land area comprising deserts. Though know for its mountains, this area only comprises 1/5 of the total land surface..

Water resources: The Central Asian region is divided into three primary water catchment basins: Aral and Caspian Seas and Balkhash Lake. Only the north-eastern part of Kazakhstan has links to the Ob River basin, flowing through the West-Siberian lowland.

The Aral Sea basin covers the territory about 2,0 million km². The hydrological system is formed here basically on account of the Amudaria, Syrdaria, Pianj, Vakhsh, Naryn, Murgab, Zeravshan and other rivers, whose sources are located in the high mountains of Kyrgyzstan, Tajikistan and Afghanistan. Annual water flow is about 130 km³.

Land resources: The total accumulated territory of agricultural lands is approximately 290 million hectares (ha), from which 40 million ha are arable lands, including 10 million ha of irrigated lands and 220 million ha consisting of hayfields and pastures.

Mountainous forests are located in a land area of approximately 5 million ha, with the actual forest coverage at around areas 1,5 million ha. Mainly human impact has lead to the reduction of forest land percentage along with top-soil degradation, thus disrupting their natural recovery.

GDP: Since 1997, in all of the CA countries have experienced an increase in GDP. During the period from 1998 to 2006, the average economical growth observed was 8,6% per year.

Human development index (HDI): With regards to HDI, the CA countries (excepting Turkmenistan) showed an overall decrease when compared to 1992; Kazakhstan ranks 80th; Kyrgyzstan ranks 111th; Tajikistan ranks 122nd; Turkmenistan ranks 97th; and Uzbekistan ranks 109th.

We, the Presidents of fraternal Central Asian states
of Kazakhstan, Kyrgyzstan, Tajikistan,
Turkmenistan and Uzbekistan, confirming our adherence
To the United Nations Environment Program provisions
of "Agenda XXI", express our complete support
to the effort on elaboration and realization
of unique strategy on sustainable development
of Central Asian countries
Almaty Declaration
28th February 1997

Introduction

The Central Asian countries: Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan and Republic of Uzbekistan have developed the Subregional Sustainable Development Strategy for Central Asia (SSDS CA) following from the principles of sustainable development declared at the UN Conference on Environment and Development (Rio-de-Janeiro, 1992), the Millennium Summit (2000) and the World Summit on Sustainable Development (Johannesburg, 2002),

Elaboration of SSDS CA proceeds from the initiative of the countries of Central-Asian region, raised at the World Summit on Sustainable Development in Johannesburg. This was inserted into the official list of initiatives on elaboration and realization of "Sub-regional Agenda-21".

Insert 1.

P. 162. The states should:

b) undertake measures on achievement of progress in elaboration of national strategies for sustainable development and start their realization by the year 2005. With this purpose and in case of necessity, the support of strategies should be rendered taking into consideration the specific demands of developing countries, and, in particular, to less developed countries, on the base of international collaboration. These strategies, where it is reasonable, may be elaborated as the strategies..., which take into consideration the economic, social and environmental aspects of sustainable development according to national priorities of every country.

(WSSD, Johannesburg, September 2002)

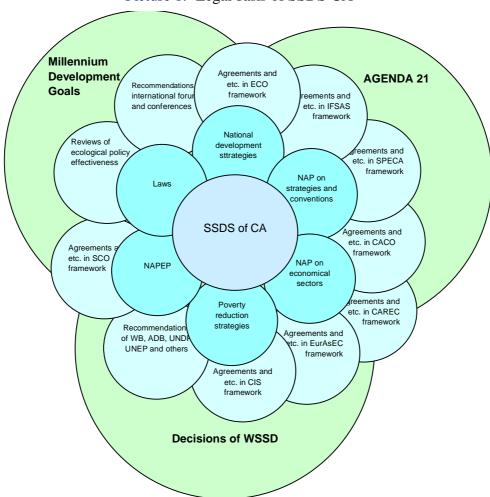
SSDS is the agreed guideline for CA countries pursuing sustainable development. The strategy will determine the general approach and directions for the formation of favorable legal, institutional, economical, environmental, informational and other conditions for achievement of sustainable development in the region.

SSDS is intended to create appropriate conditions for constructive dialogue between CA countries, to provide a connection channel for state agencies and civil society (bodies of local self-government, social organizations and etc.), and engage certain private sector entrepreneurs in the process of decision making concerning problems of balanced development of their economies and improvement of the environmental condition.

Based on global decisions on SD, the SSDS takes into consideration the directions and recommendations of several key documents, which were accepted in the framework of acting regional organizations, bilateral and multilateral agreements, including:

- Aral Sea Basin Program 2;
- Regional Environment Action Plan of Central Asia;
- Framework Convention on Environment Protection for Sustainable Development of Central Asia;

- Environmental Strategy for EECCA countries;
- Conceptions on Environment Protection and other program documents, accepted in frameworks of SCO, ECO and other regional organizations, and also UNDP Assessment Reports on Human Development in CA, and regional strategies of international institutions (ADB, WB, UN EEC and etc.);
- National strategies and plans on socio-economical development, rational use nature resources and environment protection;



Picture 1. Legal basis of SSDS CA

The following documents were used in the methodology for development of the SSDS:

- Methodological recommendations for preparation of Central-Asian Strategy on sustainable development, CAREC, 2002
- Training Manual on National on Sustainable Development Strategy, UNEP RRC.AP / NSDS, 2006.

The main partners on preparation of SSDS project were:

- Scientific-Information Center of ISDC and its branches in CA countries;
- National Experts from key Ministries and Agencies of CA countries;
- Social Council within CA ISDC and CA Youth Environmental Network;
- Experts of UNEP Regional Resource Center for Asia and Pacific at the Asian Institute of Technology (AIT/UNEP RRC.AP)

SSDS was developed in accordance with decision of ISDC of IFAS through the financial and technical support of AIT/UNEP RRC.AP and the Government of Norway.

Section 1. Factors, Determining the Transition of Central Asian Region to Sustainable Development

1.1. Background of Central Asian Transition to Sustainable Development

Central Asia is one of the sub-regions of Asia and Pacific region, where socio-economical and ecological problems converge together. However, this region has significant natural and human resources for supporting development.

In the CA region there are large resources of oil and gas, coal, iron and copper ore, phosphorites, uranium, non-ferrous metals and building materials. Kazakhstan, Turkmenistan and Uzbekistan have significant volumes of strategically important energy resources, particularly oil and natural gas. Turkmenistan ranks third in the world among greatest gas exporters; Uzbekistan is eighth in the world in gold production from mining. Fresh water resources of region are concentrated in glaciers of mountainous ecosystems of Kyrgyzstan and Tajikistan, the latter of which takes one of the leading places in the world with regard to hydro-resources, capacity of which is currently used approximately only 10% of the total estimated volume.

Central Asia also has a unique biological diversity. More than 7000 species of higher flora, 900 species of vertebrates and more than 200 000 species of invertebrates are found concentrated here. There exist a zone of interpenetration of Asian and Mediterranean flora communities in the territory of the region. There also exist a high rate of endemism (20%). Mountains cover about 20% of CA territory and serve as a reserve of flora and fauna diversity.

Abundance of warmth, light, and sufficiently fertile soils create the favorable conditions for agriculture development. CA countries are the ancient center of irrigated agriculture. The great territories of irrigated lands are concentrated in the middle and lower course of Amudaria, Syrdaria and Zeravshan Rivers, and in the sub-mountain valleys. The total area of agricultural lands of CA consist of approximately 300 million ha, from which 40 million ha are arable lands and about 10 million ha is irrigated.. The area of grasslands and pasture is 220 million ha. In Kazakhstan and Kyrgyzstan, the grain-crops predominate, while in the other three countries industrial crops, mainly cotton, reign supreme. The CA region takes second place in cotton production and export after the USA. The natural conditions are quite favorable for pasturable cattle-breeding. Almost 80% of CA territory is used for pasturing of sheep, goats, camels and horses. A sufficiently favorable geopolitical location of Central Asian countries is the precondition for their sustainable development. The CA region is located on the intersection of the Euro-Asian transport corridor and sits at the junction of several regions and sub-regions, including Europe and Middle East from one side, South Eastern Asia from another, Russia from the north and Hindustan peninsula from south. Historically, the Great Silk Road crossed the region connecting the countries of Eastern Asia and Europe. For example, there is the Turkestan-Siberia highway and railway system that runs through the territory of the region, providing trade routes from Europe to the Asia and Pacific region. The existing transport infrastructure and capacity of region in relation to the development of new communication systems creates favorable conditions for sustainable development of the region.

Countries of the region adhere to sustainable development policy. After obtaining independence from the USSR, they accepted the basic normative and legislative documents, national strategies and programs, which became the legislative basis for sustainable development.

CA countries have ratified the key environmental international conventions and agreements, which, from the global point of view, are the guarantee of environment conservation and prevention of natural disasters. The action plans on implementation of commitments on accepted UN environmental conventions are elaborated and realized and the appropriate institutional structures are established.

Insert 2.

Strategic Documents and Institutional Bodies on SD

Republic of Kazakhstan

- Strategy of Development of Kazakhstan till the year 2030
- Strategic Development Plan till the year 2010
- Conception of Environmental Security for the Period 2004 2015
- Strategy of Territorial Development till the Year 2015
- Concept of Transition of Republic of Kazakhstan to Sustainable Development for the period 2007

 2024
- Council of Sustainable Development of Republic of Kazakhstan
- Sustainable Development Fund "Kazyna"

Kyrgyz Republic

- Strategy of the Development of Kyrgyz Republic for the period 2007-2010
- Conception of the environmental safety
- Conception of the forestry branch development for the period up to 2025
- National Forestry Program for the period up to 2015
- National plan of action the forestry development in Kyrgyz Republic for 2006-2010

Republic of Tajikistan

- National Strategy on Development of Republic of Tajikistan for the period till 2015
- Poverty Reduction Strategy of Republic of Tajikistan for the period 2007 2009
- Conception of Transition of Republic of Tajikistan to Sustainable Development till the year 2030
- National Sustainable Development Commission

Turkmenistan

- National Program "Strategy of Economical, Political and Cultural Development of Turkmenistan for the period till the year 2020"
- National Action Plan of President of Turkmenistan on Environment Protection
- State Commission on Implementation of Commitments of Turkmenistan on UN Conventions and Programs on Environment Protection
- National Program of President of Turkmenistan on Improvement of Social Conditions of Inhabitants of Villages, Settlements, Cities, Etraps and Etraps' Centers for the period till 2020 Republic of Uzbekistan
- National Conception and Strategy on Sustainable Development of Uzbekistan
- National Action Plan on Hygiene and Environment (NAPHE)
- Program of Actions on Environment Protection of Republic of Uzbekistan for the period 1999 –
 2005 and Program of Actions on Environment Protection of Republic of Uzbekistan for the period
 2008 2012 for Achievement of Sustainable Development
- National Strategy and Action Plan of Republic of Uzbekistan on Biodiversity Conservation
- Program of UNDP and Government of Uzbekistan on environment protection

The countries of region realize the benefit of collaborative activities in ensuring environmental policy development and the effective prevention of negative impact on the environment in the region. The main priorities in the area of environment protection have been determined and provide the basis for elaboration and acceptance of the following regional documents:

- Regional Environmental Action Plan for CA (2001);
- Program on concrete activities on improvement of ecological and socio-economical situation in Aral Sea basin for the period 2003 2010 (2003);
- Framework Convention on Environmental Protection for Sustainable Development in Central Asia (2006).

1.2. Regional Collaboration as the Key Factor of Sustainable Development

The peoples of CA have a common history and culture, in addition to similar economical, financial, educational and ecological standards, which stipulate their adherence to regional collaboration. In turn, development of regional collaboration mechanisms is the optimal way for

achievement of economical growth and successful development of the region as a whole. In accordance with assessments made by international organizations, the regional collaboration of Central Asian countries in the sphere of human development and safety assurance will lead to significant political and economical benefits. CA countries are the active members of international regional organizations - CIS, CACO, SCO, EurAsEC and others.

The leaders of the CA countries, through the framework of regional and international activities, accepted declarations, multilateral and bilateral agreements in the area of socio-economical cooperation and environment protection, joint solutions of transboundary hydro-economic and ecological problems, as well as in the areas of narcotics trade and combating terrorism. The main directions of sub-regional collaboration are:

- regional security that takes into consideration all aspects of safety;
- creation of conditions for improvement of frontier cooperation between countries for assurance of accessibility to profitable markets for the realization of the export of the region's products;
- reduction of operative expenses and the rendering of support for transit transportation movement through the region;
- rational use of water and energy resources and the development of infrastructure for energy-productive and energy-distributive capacities for assurance of sustainable growth;
- prevention of eco-catastrophes and mitigation of their consequences on a regional scale; e.g. Aral Sea crisis, desertification, irrational use of water and land resources, spreading of infectious diseases and etc.:
 - integration against threats for CA connected with violence, narcotics trade and terrorism;
- joint solution of issues concerning environment protection, ecological safety, migration, health care, education and nature disasters prevention.

The heads of the five CA states signed Nukusskaya (1995), Almatinskaya (1997), Ashgabadskaya (1999) and Dushanbinskaya (2002) Declarations concerning joint activities on solving the problems of Aral Sea and Priaralie, along with ecological enhancement and assurance of socio-economical development of Aral Sea Basin. These agreements are basic documents, intended for implementation of sustainable development conception in CA countries.

In the region, an organizational base was created for joint activities on solution of problems related with socio-economical development and environment protection. This includes the following organizations and Institutions:

- 1. Council of Heads of CA countries and President of IFAS.
- 2. Managing body of IFAS.
- 3. Interstate Sustainable Development Commission (ISDC), which is responsible for the elaboration and coordination of activities on realization of strategies, plans and programs on environment protection and sustainable development in the region.
- 4. Interstate Commission for Water Coordination (ICWC), which realizes coordination of operative activities on water resources management and measures on melioration for stabilization and sustainability of hydro-economic activities.
- 5. Council on Energy of CA and United Control Center "Energy", located in Tashkent city, which are responsible for balanced and synchronic work of energy transferring and distribution system, taking into consideration the requirements on irrigation.

The essential factor of strengthening regional cooperation and assurance of effectiveness of CAR Initiatives on Sustainable Development is the creation of sound mechanisms on coordination and realization of measures and projects in accordance with "Millennium Development Goals" Document.

1.3. Main Tendencies of Socio-Economical Policy Development

In the last years, Central-Asian countries have observed tendencies for economic growth, spurred by structural reforms in various economic areas and through industrial reconstruction.

Insert 3.

CA country	1999/2000	2002	2003	2004	2005	2006			
GDP growth rate, in % to previous years									
Kazakhstan	102,7	109,8	108,9	108,6	109,5	109,7			
Kyrgyzstan	104	100	107	107,1	99,4	107,3			
Tajikistan	103,7	110,8	111	110,6	106,7	107,0			
Turkmenistan	116,5					110,1			
Uzbekistan		104,0	104,2	107,4	107,0	107,3			
Share of foreign investments in fixed capital, in USD millions									
Kazakhstan	4191	7177	8878	12524	18219	22288			
Kyrgyzstan	228	200	205	239	283	357			
Tajikistan	59	75	104	199	219	304			
Turkmenistan									
Uzbekistan	3139	1876	1955	2427	27072775				

Source: Statistical Book "EurAsEC Countries" - M.2007; Integrated Assessment of Environment in Central Asia: Report - Ashkhabad, 2007

Note: "..." - lack of data

CA countries have achieved certain successes in improvement of mechanisms on eco-nomical sector management, along with taking appropriate measures on increasing people's incomes and assuring public access to health care services, education and social protection are undertaken.

The conditions for acceleration of small and medium business development have been created. The programs on job creation and development of rural infrastructure are realized.

Some of the primary factors for the CA countries' economical development relates to the decreasing of state regulation on economic activities and the attraction of foreign investment to the region's economies, along with their integration into international economic partner-ships.

The priorities for the CA sates in the sphere economical development include:

- macro-economic equilibrium;
- establishment of favorable business and investment conditions;
- enhancement and strengthening of processes on economic liberalization;
- decreasing the level of state regulation of business activities and the improvement of access to industrial resources and market for small and medium size businesses;
- removal of obstacles and rendering support to the trade and advancement of export potential;
- solution of issues concerning social problems, employment and on increasing the in-come of the countries' population's.

1.4. Problems in Achievement of Sustainable Development

Central Asian countries, in spite of achieved successes in formation of new-socio-economic systems with market principles of development, continue to face particular prob-lems and difficulties. These, in turn, hinder development both in the individual countries and in the region as a whole.

These problems consist of the following:

• different level of economic development in various states and differences in rates of market reform realization;

- limited delivery of capital (industrial, commercial, financial and insurance) to the re-gion;
- poverty and its consequent problems, including unemployment, migration of popula-tion for job seeking, lack of access to the fresh water and sanitary services;
 - low level of public access to qualitative health care and educational services;
 - spread of terrorism, extremism and illegal narcotics trade threats;

Insert 4.

CA country	1999	2002	2003	2004	2005	2006			
External debt, % from GDP									
Kazakhstan	49,4	66,3	64,2	65,6	66,0	64,9			
Kyrgyzstan	132,6	114,5	104,2	95,5	77,1				
Tajikistan	53,4	81,2	66,3	53,3	50,4	43,4			
Turkmenistan	-	-	-	-	-	-			
Uzbekistan	-	-	-	-	-	-			
Population, living under poverty line, %									
Kazakhstan	34,5	34,2	19,8	16,1	13,8	12,2			
Kyrgyzstan	55,3	44,4	39,3		•••				
Tajikistan	82,8	83,0	64,0	57,0					
Turkmenistan	-	-	-	-	-	-			
Uzbekistan	-	-	-	-	-	-			
Population growth rate, in % to previous year									
Kazakhstan	98,03	89,5	92,7	120,8	140,7	152,8			
Kyrgyzstan	101,3	100,8	101,1	101,1	100,9	100,9			
Tajikistan	102,1	102,1	102,1	102,1	102,1	102,1			
Turkmenistan	104,1	105,3	106	104	103	101			
Uzbekistan	101,5	101,2	101,1	101,2	101,2	101,2			
Expected lifetime, years									
Kazakhstan	65,7	66	65,8	66,1	65,8	65,9			
Kyrgyzstan	68,7	68,1	68,2	68,2	67,7	67,7			
Tajikistan	68,4	69,1	70,1	71,0	70,6				
Turkmenistan	66,8	68,1	68,8	68,6					
Uzbekistan	70,3	71,2	71,6	72,5	72,8				

Source: Statistical Book "EurAsEC Countries" - M.2007; Integrated Assessment of Environment in Central Asia: Report - Ashkhabad, 2007

Note: "-" - lack of statistics, "..." - lack of data

- lack of a unique strategy and programs of activities in the region on development of integrated processes along with effective mechanisms for the realization of decisions accepted on the international level;
 - imperfection of system concerning natural resources management;
- irrational use of water resources, contamination of trans-boundary water-ways with various substances, mainly from wastes coming from industrial enterprises and irri-gated fields;
- degradation of natural resources, contamination of the environment and loss of bio-logical diversity, decreasing of mountainous glacial areas and capacities of ecological systems for self-recovery;
- lack of a regional program on adaptation measures to climate change ;Aral Sea basin ecological crisis;
- lack of complex regional programs on preventive measures for reduction of risks and consequences of natural disasters;
 - low level of environmental education and upbringing;
 - low level of financing for science and coordination of scientific works;

- lack of development of systems on transferring and implementation of new technolo-gies and mechanisms of clean development to the economic sector;
- imperfection of systems on regional information exchange in the sphere of sustainable development;
- low degree of civil institutions' participation in the process of making decisions con-cerning sustainable development.

1.5. Main Principles and Priorities of Sustainable Development

In the SSDS, sustainable development is characterized as a complex array of economical, ecological and social ideas, which are the basis for assurance of appropriate living and work-ing standards in Central-Asian region.

Sustainable development is considered as a new model for interactions between people and the environment, new ideology and culture.

SSDS principles proceed from UN recommendations on sustainable development, Rio-de-Janeiro Declaration on Environment and Development, and also from agreements accepted in the frameworks of acting regional organizations, bilateral and multilateral agreements be-tween countries of the region.

SSDS takes into consideration the following interrelated provisions:

- the scale of an economy corresponds to ecologically sustainable system of life-support;
- the number of population and the volume of existing infrastructure should be balanced with ecological capacity;
- equitable distribution of resources between present and future generations, and also between people and other biological species;
 - effective distribution of resources in time-space;
- demands of every individual (people, animals and plants) should not overstep the reasonable natural limits.

Sustainable development of the region includes the following:

- responsibility of every state for sustainability in the region;
- observation of balance of interests for all states in the region;
- admission of peace and security as the basis for sustainable development of the region;
- sustainable political development of all countries in the region;
- assurance of the right of every state on determination of development method according to their own historical experience and national peculiarities; on protection of terri-torial integrity and national dignity; and on equitable participation in international ac-tivities;
- intention for creation of supporting and open international economic system, leading to economic growth and sustainable development in all countries towards effective so-lution of problems, connected with aggravation of environmental conditions;
- admission of socio-economical development and environment protection as intercon-nected and inseparable components;
- admission of environmental security as one of the main priorities of development in the region;
 - assurance of close collaboration in solution of the most important task poverty eradication;
- improvement of demographic indicators in the region on the base of introduction of a health society paradigm;
- priority for the rational use of natural resources by proper planning on economical development;
- assurance of transition to more a balanced and scientifically sound system of agricul-ture and forestry management;

- adaptation of an eco-system approach in natural resources use;
- introduction of economic mechanisms to hydro-economic activities and incentives of watersaving in various economic sectors;
- admission of public awareness as an important condition for the coordination of activi-ties towards implementation of ecological and socio-economical policy in the region;
- development and support of civil institutions' activities in sphere of environment protection and sustainable development.

SSDS priorities were determined on the base of:

- fixed constitutional rights of CA people;
- national strategies, programs and plans on improvement of socio-economical and ecological situation;
 - interstate agreements, programs and plans;
 - national and regional strategies of donor activities development.

1.6. Goals and Objectives

The main task of SSDS is the establishment of regional collaboration, assuring sustainable socio-economical development parallel with conservation and rational use of natural re-sources for present and future generations in the countries of the Central-Asian region.

By the transition of CA to sustainable development, the following items should be taken into consideration:

- socio-economic conditions of development both in individual states and in the region as a whole;
- achievement of goal-oriented indicators, which are specified in the national strategies and programs;
 - international trends in assurance of global human development and security;
- commitments of states of the region on international agreements in accordance with the frameworks of UN, CIS, SCO, CACO, IFAS and other international and regional organizations.

For achievement of planned purposes, SSDS specifies the purposive strategic directions and mechanisms of their realization. Implementation of SSDS is planned for the period up to 2030, which is divided into 2 distinct phases:

First phase (2008 - 2015) - assurance of transition of the countries in the region to sus-tainable development, including solutions to the great volume of tasks connected with market reforms that take into consideration the ecological environment; increasing of peoples living standards and the creation of the necessary conditions for sustainable and safe development of society.

During this phase, the following tasks are completed:

- improvement of legislative base, including national and interstate aspects;
- establishment of ecological standards that take into consideration the real capacities of the countries in the region;
 - regulation of transboundary contamination of the environment;
 - monitoring of conditions and use of natural resources;
- increasing of effective management of transboundary surface and underground water- flows in accordance with the framework of existing interstate normative acts;
- elaboration and implementation of indicator systems for complex assessment of sus-tainable development in the region, creation of unique informational ecological net-work;
 - formation of ecological ideology;

Second phase (2016 - 2030) - assurance for the transition to ecologically-oriented socioeconomic development.

During this phase problems should be solved following from tasks with consequent concretization after completion of the previous phase. This phase will include the following tasks:

- elaboration and implementation of unified ecological norms;
- elaboration and implementation of agreed mechanism on natural resources manage-ment;
- formation of common informational space in the sphere of monitoring and analysis of environmental conditions.

By differentiation of individual tasks mandated by the SSDS, effective clustering of particular tasks may be determined, which should be solved by certain countries; or example, with regards to the assurance of environmental well-being in the Aral Sea basin development of Kazakhstan's and Turkmenistan's sectors of Caspian Sea shelf; regarding the combating of desertification; and with regards to mountainous eco-system conservation; etc.

The purposive directions of Central Asia's transition to sustainable development are determined and divided into the following groups:

- Goal 1 Assurance of progressive economical development;
- Goal 2 Assurance of social security;
- Goal 3 Assurance of environmental sustainability:
- Goal 4 Integrated Water Resources Management:
- Goal 5 Creation of mechanisms for energy safety;
- Goal 6 Conservation of natural and cultural treasures;
- Goal 7 Rendering support to and development of measures on effective management.

Section 2. Purposive Strategic Directions of Sustainable Development

2.1. Ensuring of Progressive Economical Development

The guarantee of sustainability and security of CA countries is their progressive economic development in accordance with essential demands of their populations.

The key task to achieve this Goal is to continue making economic and structural reforms in all the countries of the region, in turn contributing to the formation of market capacity and the appropriate diversification of economy.

Economic diversification includes the following:

- gradual reduction of share of the feed sector of the economy and increasing of the level of profound processing of raw materials due the adoption of advanced develop-ment of the processing industries;
 - introduction of clean, energy- and resources-saving technologies and non-waste indus-tries;
 - rational use of water resources from interstate sources;
- introduction of a system on agriculture management adapted to natural landscapes and preventing land degradation processes.

It is necessary to integrate the issues on rational use of natural resources and environ-mental protection with the national economic strategies and action plans.

The issues of maximum conservation of natural resources and the environment should be solved by means of technological reconstruction of key impacting industrial and social spheres on the base of the newest scientific knowledge. Use of new technologies should be realized simultaneously with the formation of more perfect industrial structures and econo-mies with assurance for covering social demands concerning effective use of natural resources and reduction of man-caused impacts on the environment.

Organization and realization of technological reconstruction of industry demands solution of following issues:

- creation of information base on technologies' markets and innovations' infrastructure, which assure the transferring of technologies from science to industry;
- substantiation and selection of technological structure of industry on macro- and mi-cro-levels;
- formation of system on innovation programs, including state, departmental and private company's ones, whose purpose will be the distribution of progressive technologies;
- establishment of sustainable financial systems, assuring the development of innovation processes both on state and non-governmental levels;

For economic development of every CA country it is necessary to integrate their economy with the global economic system, and also to involvement with international division of labor and international trade.

Integration of CA countries with the global economy is stipulated by sustainable relations with countries, which are participating in the regional economic system, while taking into consideration the interests and common conditions of co-existence and independent functioning of the economy of the individual country, as the opened sub-system with their own well-coordinated internal mechanisms.

For activation of the integration process, it is necessary to carry out the following tasks:

Improvement of customs and frontier rules, intended for increasing of trade volumes, ren-dering support to economical growth and job creation:

- unification of customs and frontier rules and procedures;
- improvement in the management of customs and frontier services.

Creation of an effective transport infrastructure:

- attraction of financial resources for rehabilitation and development of existing trans-port networks and regional communications for assuring an outlet to neighboring mar-kets between Europe and Asia;
- improvement of legislative norms in the transport sector, including attraction of pri-vate transportation companies and individuals;
 - creation of an effective regional transit system for all kinds of vehicles.

Encouragement of investment activities, removal of obstacles, which hinder development of business, and improvement of financial sector functioning:

- reduction of state regulation on economical activities;
- stimulation of direct foreign investments delivery and assurance and observation of proprietary rights of foreign investors;
- increasing the effectiveness of state investment utilization and mobilization of the population's savings;
- active development of small and medium business and culture of entrepreneurs' activity. Rendering support to the free movement of labor resources:
 - simplifying procedures on labor migrants movement inside the CA region;
- assurance of legislative protection for labor migrants and access to information on their rights protection according to legislation of the receiving country;

Rendering support for the establishment of economic institutions of a modern democratic society with market economy:

- improvement of mechanisms for dialogue between governments and business circles;
- rendering support to the establishment of business collaboration and the development of regional relations for the expansion of economic capacities of the CA countries to-wards the solution of common problems.

Economical integration of the region is assured by taking into consideration the follow-ing:

- determination of common regional approaches to the use of hydro-energy and natural resources. For this purpose, the common regional mechanisms, legislative norms and rules should be elaborated; and also, the institutional structures for the use of hydro-energy and natural resources should be created. It will improve the resources man-agement, reduce the conflicts risk, increase the capacities of electricity export, and as-sure the accessibility of these resources to the countries' populations.
- improvement of resources-saving mechanisms on the basis of rent approach, and in particular, taking into consideration possibilities on capitalization of ecosystems' re-sources. It is necessary to consider the compensation expenses on use of non-renewable resources and integrity of natural complexes. It will allow the conservation of the environment, formation of purposive financial sources for undertaking ecologi-cal measures on rational natural resources use.

Foreign-economic policy of CA countries should contribute to the establishment of good-neighbor relations, creation of new, effective and mutually beneficial trade and economical cooperation both between CA countries and other states all over the world.

The regional priority of foreign-economic policy should be the expansion of traditional markets of the CA countries' production and sources of fuel-energy and mineral resources, creation of favorable conditions for reciprocal capital investments, acceptance of effective measures for increasing of competitiveness and sustainability of the economy in every country.

Sustainable functioning of national economy is connected with the strengthening of international industrial cooperation and development of foreign trade relations. Certain CA countries have strengthened their collaboration with the World Trade Organization (WTO), be-coming its member or discussing such possibility. Much depends on the technological and sectoral structure of the economy in each individual country as well as on the degree of inno-vation development and the approach should be differentiated and decisions should be made outside of the regional strategy.

Insert 5.

Nowadays, out of five CA countries, only Kyrgyz Republic is WTO member. Application of Republic of Kazakhstan for WTO membership is advanced significantly, and, also the Program of Working Group conferences on joining is functioning.

The process of membership Republic of Tajikistan and Republic of Uzbekistan in WTO is on the initial stage of agreement. Turkmenistan has not applied for membership in this organization.

Source: UNDP Report on Human Development, 2006

Generally, CA countries that become members of the WTO will contribute in attracting direct foreign investments, increasing the attractiveness of internal investments and creating opportunities for trade on the markets of many countries throughout the world.

In relation to the economic development of regional influence on the solution of problems regarding food safety: availability of foodstuffs and their accessibility to population; ecologi-cal safety; rational nutrition and sustainability of providing population with foodstuffs, assur-ance of food security demands consolidation of efforts of all the CA countries in all economic sectors. For assurance of food security it is necessary to:

- increase the volume of internal food production;
- realize the measures on reduction of dependent internal food-market on import by means of increase of home-made foodstuffs' competitiveness;
- assure development of agriculture; create the conditions for realization of labor poten-tial of the poor population (especially in rural localities), strengthen rendering of pur-poseful social support to vulnerable strata of society;

- assure balanced level of income for all public groups with minimal norms of essential foodstuff consumption;
 - elaborate on the system on foodstuff quality control according to international stan-dards;
 - realize the monitoring on assurance of foodstuffs safety for the population;
 - optimize the system of formation, storage and use of state foodstuff stocks;
- create conditions for the prevention of crisis situations by means of the establishment of an early warning system; undertaking of preventive measures and development of insurance system for the agricultural sector.

2.2. Ensuring of Social Security

Achievement of optimal conditions of social development is impossible without improvement of human and intellectual potential. Nowadays, the majority of CA countries relate to the group of countries with low level of human development potential.

For improvement of the situation on sustainable development in a demographic aspect, it is necessary to increase the living standard of the people, to solve the poverty and unemploy-ment problem, to provide the population with appropriate access to health care and education services.

On the transitional stage, the states of the region experience the aggravation of social conditions, reduction of social services and decreasing of living standards of population. For the former, it is connected with lack of significant reforms in social sphere, ineffective management and insufficient financing of the social aspect, lack of appropriate professional staff and material-and-technical basis. Social policy, in conditions of market economy, should take into consideration the differences in social status of population.

Poverty eradication, removal of inequality in incomes and decreasing of unemployment level, improvement of functioning of health care and education services all will be possible by the introduction of effective social policy at the national level.

There is a list of social policy priorities in the states of the region during this transitional period: *Institutional transformations in education and health care systems:*

- reformation and improvement of management structure in social sphere on the na-tional and local levels; division of authority among various governing levels;
 - introduction of modern information technologies in managerial sphere;
 - development of medical and educational services' markets;
- expansion of public forms of governing and assurance of transition to new mecha-nisms of financing;
- simplifying of licensing process, attestation and accreditation procedures in the sphere of education and health care.

Strengthening of education system capacity and assurance of its outlet to the international level:

- review of government standards, curricula and programs, training and methodical materials, system on improvement of qualification level of teachers and managerial staff;
- introduction of informational and computer technologies to the educational system; enlargement of access to internet;
 - updating and expansion of material-and-technical base.

Improvement of availability, quality and effectiveness of medical services:

- improvement of heath care system management;
- increasing of share of financing in GDP for health care development;
- improvement of system on medical products control;
- improvement of infrastructure and material-and-technical base of health care system.

Improvement of maternity and childhood protection:

- rendering support to regional programs on maternity and childhood protection;
- providing of maternity and childhood services with investments;
- assuring of gender policy development;
- increasing of educational potential of women and children.

Reduction of infectious diseases spreading:

• elaboration and rendering of support to regional programs on HIV/AIDS, malaria and tuberculosis combat.

Improvement of statistical reporting system on employment of population:

• creation of a system of employment registration in all economic branches; determination of professional level in governing circles via the framework of state management reform; improvement of employment registration methods.

Stimulation of job creation:

• establishment of partnership between state and private sector - it is supposed to in-crease the employment level and incomes of the population mainly by means of struc-tural reforms, development of rural infrastructure, acceleration of small and medium business development.

Improvement of employment services' activity and system of public professional training:

- perfection and harmonization of labor legislation;
- establishment of employment services collaboration on regional level;
- supporting of establishment network on information-consultative services, oriented inline with the demands of population and employers;
 - improvement of sectoral and territorial employment structure;
- adaptation of initial professional education system to the demands of the labor market and establishment of centers on professional education and retraining for citizens of the country and labor migrants;
- improvement of financial mechanisms regarding the system of professional education and retraining, taking into consideration the attraction of employers' resources.

Further development of social protection system, taking into consideration the demands of the market economy:

- reformation of the social protection system along with increasing of address assistance role and development of insurance system;
- reformation of pension system, taking into consideration the development of non-governmental pension funds.

CA countries should establish regional cooperation with involvement of international organizations in carrying out their essential social tasks connected with migration, health care and education. Accessibility of education may increase significantly the possibilities of the CA countries' population. In the sphere of social development, the introduction of regional standards and the effective and continuous monitoring of their implementation will contribute to progress towards achievement of planned goals. Joint use of information on these spheres of activity contributes to the spreading of advanced experience and bridging with appropriate governmental and non-governmental structures and associations, businessmen and population; also, it contributes to joint solutions of existing problems.

For this purpose it is necessary to create the necessary success conditions:

• creation of conditions for frontier cooperation - providing migrants, students and inhabitants of frontier settlements with medical services; simplifying of financial means transferring, as important condition of social evaluation of human development. Pro-viding the inhabitants of border districts with good health care and education services; supporting regional mass media projects and civil organizations in establishment of appropriate cooperation.

- supporting of regional programs, contact networks and initiatives in social sector, including realization of tasks on combating infection diseases and conducting of infor-mational and educational campaigns.
- supporting of student and scientific exchanges; assurance of mutual recognition of diplomas, academic degrees and academic status.
- improvement of regional social statistics in the aspect of corresponding to interna-tional standards; establishment of progress monitoring in the social sector.

2.3. Ensuring of Environmental Sustainability

CA ecosystems are characterized by heightened vulnerability, and at the same time the level of socio-economic development of the countries in the region depends on the effective solution of ecological problems: e.g. Aral Sea crisis, contamination of trans-boundary water ways - Amudaria and Syrdaria Rivers, increasing of mountainous ecosystems degradation, desertification and biodiversity reduction.

The amount of territory covered by forests in Central Asia decreased significantly from the middle of the last century. Especially high human impact was carried out on territories covered by flood-lands (tugai) and used for agricultural purposes.

The destruction of ecosystems led to significant reduction of biodiversity. The number of flora and fauna species extinct or being under the threat of extinction, has increased. In certain cases, these processes have an irreversible character.

As a result of extensive economical activities not taking into consideration the natural capacity of ecosystems, more than a half of CA territory is jeopardized by desertification processes.

Prosperity of the Central-Asian region depends in many aspects on the health condition of the Pamir and Tien Shan mountainous ecosystems. As a result of their degradation, the hydrological regime of water-flows is disrupted and their resources are becoming exhausted. In last decades, Pamir and Tien Shan glaciers lost significant volumes of their stocks and, in connection with climate change, this process is intensively strengthened.

The main reasons for environmental conditions aggravation is related to the following:

- increase of human impact on the environment;
- insufficient attention paid to natural capacity in relation to the management and development of lands;
 - exceeding of admissible limits by natural resources use;
- imperfection of environment protection system, which functions on response and correction principles, instead of prevention and prophylaxis.
 - lack of harmony between so called sectoral and environmental legislation;
- residual principle of financing environmental measures, specified in socio-economic strategies and programs;
- lack of effective mechanisms for introduction of ecological education and upbringing of population;
- insufficient of public awareness in the areas of environment protection and sustainable development.

Taking into the account the continuation of environment degradation processes and modern tendencies of socio-economic transformation in CA, it is necessary to elaborate the new (additional) approaches to management of environment conditions and principles of natural resources use.

For this Goal it is necessary to solve following objectives:

Assurance of environmental security:

- harmonization of environmental legislation, introduction of systems of international ecological standards and interstate normative-legislative regulations on environmental protection and natural resources use;
- establishment of regional ecological safety system, which will be able to assure the complex rehabilitation of ecosystems in the districts with high ecological risk, and also to orient industrial enterprises on safe public health technologies;
- elaboration of national and regional mechanisms and procedures, supporting practical realization of provisions of Convention on Environment Impact Assessment (EIA) and their integration to the process of strategies, programs and investment project realization;
- making of regional agreements on establishment of information exchange and creation of national and regional database on SD indicators and informational net on the base of new technologies.

Reduction of trans-boundary contamination:

- concretization of ecological criteria, norms and principles in relation to mutual responsibility in the area of environment protection;
 - elaboration of an updated system of environmental monitoring;
- realization of interstate purposeful programs on rational use and effective protection from trans-boundary contamination of water sources, land resources and ambient air.

Enhancement of degraded ecosystems in ecologically unfavorable zones of CA:

- revelation of ecologically harmful territories, zones and objects of potential ecological risk, to which the government should pay the priority attention;
- acceptance of preventive measures against contamination of the environment, and also measures on social protection of the population living on ecologically harmful territo-ries.

Biological diversity conservation:

- creation of protected areas including adjoining frontier territories; introduction of ECONET;
- preparation and publication of CA "Red Book";
- protection and rehabilitation of forests, including the frontier ones.

Prevention of mountainous ecosystems degradation:

- elaboration of regional complex program on study of mountainous territories' prob-lems for formulation of national and regional policy on mountainous territories devel-opment;
- rehabilitation and support of traditional methods of natural resources use; cultural natural inheritance of mountainous populations;
 - improvement of legislative basis for development of mountain eco-tourism.

Creation of favorable conditions for introduction of resources-saving, low-waste and wasteless technologies:

- supporting the development of new methods and technologies on natural resources reproduction, enlargement of the share of secondary resources use and wastes disposal;
 - elaboration of national strategies and regional programs on waste management;
- improvement of normative-legislative regulations in the area of waste management, including establishing a system of state registration and collection control, transportation, sterilization and storage;
- development of mechanisms on economic stimulation, supporting the ecologically safe treatment, secondary use and reduction of volumes of wastes formation;
- elaboration of programs on inter-sectoral development, including integration of eco-logical policy to the waste management process.

Improvement of economical mechanisms on environmental protection:

- creation of appropriate conditions for favorable investment climate in sphere of environment protection while taking into consideration the peculiarities of region and ca-pacities of CA countries;
- development of economical stimuli for prevention of environmental contamination and realization of principle "contaminator will pay" and "user will pay";
- improvement of economical system on compensation payments, stimulating the development of low-waste technologies.

Reduction of natural disaster risks and prevention of extraordinary ecological situations:

- expansion of countries' capacities in sphere of early warning of extraordinary ecological situations while taking into account the peculiarities of region;
- planning, organization and conducting of joint measures on warning about of hydrometeorological and other harmful natural phenomena, which are potentially dangerous as a geodynamic threat for environment and population (including examination of po-tentially-bursting lakes, control of glaciers thawing, control of conditions in districts with potential mudflow risk and etc.);
 - creation of systems on risks insurance by extraordinary situations on the regional level.

Increase of ecological education and upbringing level of population; professional training:

- changing of ideology and the system of social valuables concerning complex socioeconomical development in the light of rational natural resources use;
- development of legislative mechanisms on implementation of ecological education system on all levels of social and industrial activities: primary, secondary schools;
 - vocational training schools, higher educational institutions and various economical sectors;
- establishment of regional training centers' network and development and support of ecological education for sustainable development;
- collection and dissemination of reliable ecological information by means of mass me-dia involvement, publication of ecological literature, training aids and methodical ma-terials in sphere of environment protection and sustainable development;
 - establishment of information-analytical centers on sustainable development;
- awareness raising for managerial staff about benefits and incentive mechanisms of clean production technologies.

Development of civil society initiatives and support to public environmental organizations:

- support of Public Council within ISDC and CA Youth Environmental Network (CAYEN), whose activities are intended for increasing of public participation in achievement of Central-Asian Initiative purposes;
- undertaking measures on strengthening of social institutional involvement to the process of realization of REAP and national plans on sustainable development;
- support to national and regional eco-forums, associations and NGO coalitions, and also to other social institutions in solution of sustainable development issues.

2.4. Integrated Water Resources Management

Water resources - it is one of the primary limiting factors on which depends the sustain-able development of CA. Extensive use of water and land resources, which was observed in CA in the second half of twentieth century, led to the Aral Sea crisis in addition to the strengthening of negative impacts on the climate change process and limiting possibilities for further development.

Water resources are distributed unequally within the region. Water resources are formed in Kyrgyzstan and Tajikistan. The territories of Kazakhstan, Turkmenistan and Uzbekistan are more related to zones of water transition and dispersion.

The typical situation of water resources use in CA, and especially in Aral Sea Basin, is one of water deficit. In CA countries there is no problem of water availability. On the con-trary, the problem is due to deficiencies in water resources management. Deficit of water re-sources may be aggravated in the future due to the climate change problem and consequent glacial thawing; due to growth of population with high rate of rural inhabitants whose well-being depends on water availability; and also due to growth of general water consumption and other factors.

That is why, the optimal regulation of natural resources use should be realized through a framework of integrated water resources management (IWRM). Principles of IWRM include the transition from administrative-territorial hydro-economy management to a whole catch-ment basin approach. In regards to IWRM, it is a system of management that is based on reg-istration of all kinds of water resources (surface, underground, reversible) within the limits of hydrographic borders. This system considers the interests of various economic branches and water use hierarchy levels. In addition, it involves all interested parties to the process of deci-sion-making and supporting effective use of water, land and other natural resources for sus-tainably providing for the needs of nature and human society with water.

Use of IWRM assumes the establishment of conditions and order of water resources use for making of agreed decisions on interstate and in-state distribution of water while taking into consideration the issues on conservation of basin water resources and their protection from human impact.

On the regional level, IWRM includes the establishment of interstate and interdepartmental bodies with regulating, recommendation and coordinated functions concerning waters in regional scale.

IWRM takes the following factors into consideration:

- assurance of appropriate minimum water flow for supporting of existing condition of the Aral Sea:
- assurance of minimal essential water-resources volume in support of sanitary-epidemiological conditions; ecology of river basins and recreational conditions; social conditions in crisis districts of river basins;
 - determination of conditions for joint exploitation of hydraulic works;
 - strengthening of inter-sectoral water partners.

For this purpose it is necessary to carry out the following tasks:

- elaboration of normative-legislative fundamentals and achievement of similarity in legislatives of CA countries in relation to IWRM;
- development of interstate contractual juridical base for collaboration in the area of use and management of waters from international sources;
- improvement of legislative fundamentals on effective use of waters from international sources:
- development of institutional capacities of regional structures (IFAS, ISDC, ICWC and others)
- use of new technologies on cleaning and re-use of drain water and reduction of their emission to the water reservoirs;
 - stimulation of water-saving technologies use in industry and agriculture;
- active participation of public community in solution of problems, connected with ra-tional use and protection of water resources.

By cooperation in the sphere of water usage from international sources, CA countries should observe the norms of international rights and accepted agreements on the regional level, including interests of the third countries.

2.5. Establishment of Mechanisms on Energy Security

The priority factors for socio-economic development of CA countries are integrated into the sphere of power engineering in the light of high interdependency and mutual benefit, which took place during former decades.

The region is characterized by variety of energy resources, availability of exhaustible and renewable ones; peculiarities of energy policy, including price formation for energy resources.

As to availability of all kinds of energy resources, the most favorable situation is in Kazakhstan. Kyrgyzstan and Tajikistan have significant hydro-power resources, but low capaci-ties concerning hydrocarbon resources. However, no one country from CA has absolute energy security, which is necessary for sustainable development, even for short-term perspective, due to destabilizing factors of an economic, social and ecological character. Such a situation stipulates the necessity of an integrated development approach and coordinated activities of CA countries in the framework of regional collaboration on energy policy.

Development of economy and energy in CA countries has the following tendencies:

- growth of internal demands for energy resources;
- increasing of energy resources production for covering of internal demands and export to international energy resources markets
 - development of fuel-energy infrastructure;
 - development of regional collaboration in fuel-energy sphere;
- establishment of effective energy resources exchange inside of region, which will al-low to use the existing energy capacity with maximum efficiency.

One of the tasks of environment protection is prevention of ecosystem contamination, including use of ecologically clean non-traditional renewable energy sources (here: RES) - sun, wind, geothermal waters, small watercourses and etc.

At the existing conditions of significantly increasing prices on hydrocarbon fuel and determination of technical and economical limits for possible centralized energy supply with significant energy consumption in CA countries, the perspective of decentralized energy sup-ply for majority dispersed industrial objects and settlements with use of various renewable energy sources became more obvious.

In the region, there is significant hydro-power capacity, whose development is possible both from technical and economical points of view. The hydro-resources of medium and small watercourses are used mostly effectively. There are also large uranium-ore deposits. Solar energy in CA countries is used in various directions of heat supply for seasonal and all-the-year-round circle. Potential resources of RES, in particular solar energy, descending to the territory of the region during the year, significantly exceeds the consumed energy resources' availability. Moreover, in Uzbekistan, Turkmenistan and Kazakhstan, availability of large sources of geothermal energy coupled with the possibilities of receiving of biomass from vegetative origin in big volumes and on large territories, and also poor investigations in sphere of hydro-resources receiving on medium and small watercourses, make the good pre-conditions for large-scale introduction of RES into fuel-energy balance of all CA countries for assurance of sustainable and ecologically safe development of power engineering.

Energy safety of the region is assured by means of observance energy balance while tak-ing into consideration realization of national programs on socio-economic development and the introduction of energy-saving technologies.

To achieve this goal, it is necessary to carry out the following objectives:

• effective use of energy and water resources from international sources for irrigation by simultaneous maximal energy use of water discharge;

- development of a regional database and mechanisms for information exchange be-tween appropriate structures in the water and energy spheres;
- development of existing hydropower resources by means of building large, small and micro-HPS for solving energy supply issues in rural localities and removal of difficult to access areas;
- examination of capacity and elaboration of conception on RES use with indicators on use of all capacity of energy resources, including renewable energy sources;
- creation of the optimal condition (scientific-technical, organizational, legislative, fi-nancial, informational), assuring introduction of RES and energy-saving technologies to the economy in region;
 - implementation of metrological assessment of ecological-energy-economical effectiveness;
 - transition to energy-saving type of economical growth;
 - increase of power-stations' shared with the integrated usage of two or more kind of fu-els;
 - elaboration and realization of coordinated policy on external energy resources market.

For more effective collaboration of CA countries in the sphere of joint use of hydro-energy resources, the most important issues, which should be solved as priority ones, are the following:

- elaboration of normative-legislative basis of collaboration and making CA countries' legislation similar in sphere of water-energy resources use;
- creation of joint database and mechanism on operative information exchange between water and energy agencies of the CA countries;
- reorganization and optimization of structures on of water and energy sector manage-ment at the national and regional levels.

2.6. Preservation of Values of Natural and Cultural Inheritance

Central Asia is the region of ancient civilizations, where a lot of historically important monuments are kept till present time. Architectual complexes in such cities as Samarcand, Bukhara, Hiva, Hujand, Uzgen, Osh, Merv, Kunyaurgench, Nissa, and also the Buddha Temples and ancient Greek settlements in Amudaria River basin and etc. are included in the international register of architectural monuments.

For conservation of culture memorials in the CA countries, the appropriate laws are accepted and conventions are signed and ratified. The programs on historical inheritance protection from destructive human and natural impacts are elaborated and implemented, including protection from: wind and water erosion, land-slides and mud-flows, earthquakes, lifting of ground waters, soils salinization, salt and dust transferring from salt-marshes and dry bottom of Aral Sea, and also development of adjusting to monument territories.

In framework for these programs' implementation concerns the work on scientific investigation, conservation, accomplishment, creation of museums and use of medieval architectural settlements for development of tourism were conducted. The borders of protected zones of natural and cultural inheritance, which were included in the UNESCO list of world inheritance, are determined. The most important historical and cultural monuments have been re-constructed. The works on rehabilitation of historical Great Silk Road centers; on conservation and successive development of cultural inheritance of our peoples; on creation of tourism infrastructure; and on development of a network of historical and cultural reserves have been completed.

There are unique natural parks. The most well known natural parks have been proposed for inclusion to world cultural inheritance. These include:

- "Steppes and Lakes of Northern Kazakhstan" State Nature Reserve Aksu-Jabagly (Republic of Kazakhstan);
- Issykkulskaya Kotlovovina (Issyk Kul Depression)" natural complex "Sary-Chelek" (Kyrgyz Republic);

- Tajik National Park State Nature Reserve "Tigrovaya Balka" (Republic of Tajiki-stan);
- Syunt-Hasardagski state reserve, "Badhyz country of legends and winds", "Plateau of Dinosaurs and Grotto Kugitanga" (Turkmenistan);
 - Chatkalski Nature Reserve, Mountainous Gissar (Republic of Uzbekistan).

Conservation of natural inheritance in the region is regulated by environmental legislation, including control of the kinds, norms, terms and limits of hunting, fishing, collection of medicinal herbs and other useful plants. Rare and vanishing species of animals and plants are specified in the national "Red Books". The network of natural reserves, game reserves and national parks has recently been enlarged; the special ecological requirements are implemented by building of economical objects near natural parks and in protected areas; and such measures reflected positively on conservation of biodiversity and natural inheritance.

Heritage inheritance of countries in CA region has secular traditions of rational natural resources use, which assure harmonious development of the society and sustainable functioning of ecosys-tems. The historical examples of economic activities effectively integrated with natural resources conservation include:

- national methods of collection and storage of water stocks (collection from water-flow surface "takyr" and accumulation in tanker-wells "chirle", in clay water-collection pits "kaki", and in capacities made from baked blocks "sardob" and "hauz");
- building of channels, kyaris and chigir and use of various ecological and economical methods of irrigation, which takes into consideration the peculiarities of local relief and volume of water available.
- conducting irrigation works in night time, that assured providing peoples with appro-priate volume of water and contributed to development of agriculture on the arid terri-tories.

Historically, peoples elaborated rules of treatment with hydro-economical objects, which included the following provisions: regular cleansing of channels; non-admission of water source contamination; taking of such water quantity which will not reflect negatively on its volume.

Lack of irrigation water and soil salinization stipulated the necessity of introducing ra-tional crop rotation while taking into consideration the water-retaining capacity of agricultural crops. In conditions of water deficit and drought, the treatment of population by hydrological-related natural objects is especially careful (lakes with healing water, curative mud, mineral and thermal sources, self-emission wells, ancient wells, large channels, water reservoirs and etc).

The system of nomadic cattle-breeding formed during centuries prevented over-grazing of cattle, soils erosion in condition of deserts, steppes and on mountainous slopes. Such sparing regime of varied resource use has contributed to tradition of conservation of the unique land-scapes, valuable natural parks (botanic gardens, zoological and hydrological objects).

During centuries, people observed the following rules: by felling of trees and bushes, the secular exemplars of trees should be kept as the green umbrellas, especially near channels and rivers; to individual old trees were given names, and they became sacred objects, which are kept till nowadays as a memory on our ancestors. Presently, there are relict forests, groves of bushes and trees, nuciferous and valuable medicinal plants. By gathering of fruits and berries in the forests, about a half of harvest was left on trees and bushes for wild animals, birds and natural reproduction of these plants.

Traditional ecologically friendly methods of agriculture included the use of special soil, applied for building of clay fences, dung of long-year keeping and muddy irrigational allu-vions as the manual, containing rich organic and mineral nutritional substances.

In second half of XX century, as a result of extensive land use and ineffective water resources management in Central Asia, especially in Aral Sea basin, the capacity of natural system for sustainable development decreased substantially. Continued processes of environment degradation,

destruction of cultural memorial places, and also the necessity of socio-economic reforms in CA countries, demanded elaboration of new approaches to revival and safekeeping of cultural and natu-ral inheritance with taking into consideration many centuries' experience of people's treatment of the environment, which is one of the basic components of culture and civilization.

Indicators of natural and cultural inheritance conservation include the data on their condition, visitations by tourists, territories of nature reserves and parks, volumes of financing, legislative and institutional capacity of the country.

Elaboration of strategic direction should include following aspects:

- elaboration of interstate agreements for countries of the region on natural and cultural inheritance conservation;
- development of regional collaboration in-line with the framework of International Convention on Protection of World Natural and Cultural Inheritance;
- harmonization of national legislation of countries in the region in the sphere of natural and cultural inheritance conservation;
- inclusion of new nominations of CA natural and cultural inheritance to the world heri-tage list of UNESCO;
- creation of Cadastre on natural and cultural memorial places in CA and regional in-formation database on objects of natural and cultural inheritance;
- elaboration and realization of regional programs on investigation, restoration, conser-vation, protection of memorial natural and cultural places;
- introduction of new technologies on reconstruction of cultural memorial places and rehabilitation of natural ecosystems;
- development of international collaboration on investigation, conservation and popularization of unique natural and cultural objects;
 - revival of Great Silk Road centers;
- establishment of regional infrastructures on eco-tourism and development of histori-calcultural reserves' net;
 - establishment of regional centers:
- on succession in sphere of conservation cultural inheritance of CA peoples; scruti-nizing and revival of ancient traditions concerning natural resources use;
- on scientific and information database, education and awareness raising, upbring-ing of youth, preparation, publication of advertisements and presentation of mate-rials in mass media;
- nomination of "Western Tien Shan" (Republic of Kazakhstan, Kyrgyz Republic and Republic of Uzbekistan) and etc., as the trans-border historical site;
 - establishment of regional fund on support of natural and cultural memorial places;
- conservation of natural and cultural inheritance with the purpose to cultivate the care-ful attitude to the world as a whole, and to the nature in particular, and to transfer these social valuables to future generations in accordance with sustainable development principles.

2.7. Support to and Development of Measures on Effective Management

The main condition of CA sustainable development is establishment of optimal and harmonious management systems, including balanced participation of all partners in the process of decision-making on the regional and national levels.

Existing governing systems in CA countries still include certain traits of directive system, with elements of doubling and excessive administration. There are cases of government interference to economical activities. Regulative functions of state don't correspond to the developing market economy.

Goals and priorities of country program documents and plans are not connected with each

other and not consecutive; potential partners on development management (business community and civil society) are insufficiently involved in this process. The system of state govern-ing and its human resources don't correspond to the market economy, and the limited finan-cial resources, distribution of which don't concur often with priorities specified in national strategic documents, make the functioning of this system more complicated.

For achievement of effective management of sustainable development process, it is necessary to do following:

To improve the system of state government:

- reformation of state government system and development of mechanisms on involve-ment of social institutions (non-governmental, business and scientific etc.) to the deci-sion making process;
 - optimization of executive power structure with division of functions and authorities.

To improve professional training of state officials

- modernization of human resources management system and development of personnel resources;
 - improvement of education, training and re-training of state officials;
- introduction of system on professional training for state officials in sphere of sustain-able development processes' management;
- increasing of professional level and stimulation of state officials; strengthening of sal-ary incentives.

To improve the state finances' management:

- improvement of budgetary planning, increasing of effectiveness of on-budgetary expenditures;
- introduction of flexible and effective measures of financing and management, assuring the increase of quality and accessibility of public services.

To improve the state regulation of economy:

- optimization of state control and supervision functions;
- reformation of environment management system; perfection of national legislation of countries in the region with taking into consideration the system approach;
 - development of new management model on the principles of corporative management;
 - reducing of administrative procedures on economical activities' regulation.

To improve the legislative and juridical system

- assurance of maximal transparency by elaboration and implementation of legislative acts;
- reformation of juridical system;
- improvement of court of arbitration legal conditions as the alternative to national courts;
- improvement of system on public application to state bodies; and perfection of parties' information.

To create conditions for formation of appropriate social institutions:

- expansion of social institutions' participation in making of paramount decisions;
- support to public organizations in making solutions concerning sustainable develop-ment in framework of regional organizations' activities;
- improvement of public access to information on environment and socio-economic development of region;
- improvement of local self-government system with expansion of their authorities in sphere of local issues and property rights for providing population with effective and qualitative services.

Section 3. Mechanism of Implementation

3.1. Organization of Implementation Process

Organizational methods of SSDS implementation include the following:

1). *Mechanisms* of implementation, assuring the interstate and interdepartmental cooperation, including social institutions on national and regional level.

Realization of agreement on collaboration between CA countries should include the legislative frameworks of SSDS provisions and coordination of partners' activities within the framework of regional projects and programs, and also national strategies and programs intended for achievement of sustainable development in the countries.

For this purpose it is necessary:

- to elaborate on mechanisms for interdepartmental collaboration, including social institutes, in the area of environment protection and sustainable development
- to increase the role of mass media and public associations in raising of ecological selfconsciousness of population;
- to expand the possibilities of local communities' participation in the process of SSDS realization; they will be involved for finding of ways and means for assurance of sus-tainable development in concrete cities and rural localities.
- to involve the private business structures, which contribute greatly to providing of population with employment, income and support to economical growth for assurance of public well-being.
- 2). *Instruments* of realization long-term and middle-term programs and yearly plans on socio-economical development and environment protection in the countries of region, which are intended on sustainable development with specification of concrete measures on realization of SSDS provisions.

In this connection it is necessary to take into consideration the following:

- elaboration and fulfillment of regional programs and plans should be realized while taking into account the national priorities of countries in the region and with direct participation of civil society representatives;
- elaboration of regional and national sectoral and inter-sectoral programs should in-clude the introduction of issues on environment protection and sustainable develop-ment.

3.2. Financing of Implementation Process

SSDS implementation includes mobilization of financial resources and their effective management.

SSDS implementation depends on financial capacities of CA countries, corresponding to development of their economies.

Sources of SSDS financing:

1. *Budgetary financing* - the main part of SSDS is realized in the framework of national strategies and programs on sustainable development through financial support of state and local budgets of the respective CA countries.

In this connection it is necessary:

- to continue the structural reforms in financial sector;
- to improve the methods of state financing management and assure the transparency of state budget;
 - to create the favorable conditions for involvement of investors.
- 2. *Ecological funds*, formed at the account of payments for contamination of environment, natural resources use and punitive measures.

In this connection it is necessary:

- to reform the system on ecological payment and incentives for prevention of environ-ment contamination and realization of the principles "contaminator will pay" and "user will pay" while taking into consideration the market transformation;
 - to develop the ecological funds and their management for assurance of their purpose-ful use.
- 3. *Internal investment resources* the financial means of enterprises with any property form, putting up their money for the modernization of technological processes, including building and reconstruction of environmental object, and also capital charges for rehabilita-tion of main funds on environment protection.

In this connection it is necessary:

- to create conditions for the formation of internal investments, oriented on solution of sustainable development issues;
- to establish the economical stimuli for introduction of clean technologies and rational natural resources use, including tax remissions and privileged crediting;
- 4. *External resources* grants and investments of international financial institutions, international funds and individual donor-countries.

In this connection it is necessary:

- to create the favorable conditions for investment attraction;
- to improve the coordination and management of external assistance for effective use of delivered resources;
- to attract maximum support and to use effectively the international financial economic mechanisms in relation to environment protection, which is specified in international conventions and agreements.

3.3. Monitoring and Evaluation

SSDS monitoring and evaluation is a systematic supervision of process, character and condition of changes in various spheres of vital functions of the region; assessment of planned tasks and correction of accepted decisions on all levels of management of SSDS implementation.

System of SSDS monitoring and evaluation is based on existing institutional and organizational capacities of the region: use of regional organizations' and national structures' ca-pacities.

The leading role in assessment of SSDS implementation is given to the Council of Heads of Central Asian countries. The Council considers the assessment reports about realization of SSDS and gives its recommendations to the government of countries and regional organizations.

Assessment reports on the process of SSDS implementation are submitted to the Council of Heads of Central Asian countries by IFAS Executive Committee.

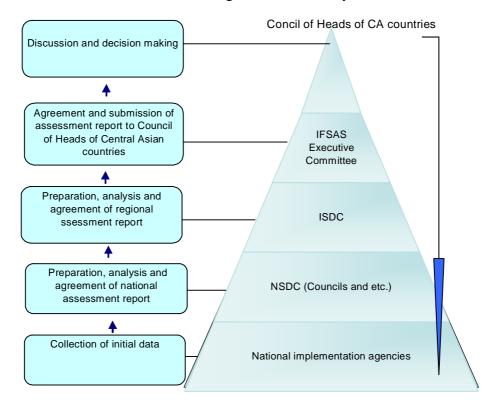
ISDC is the working body, responsible for coordination of activities on the organization of SSDS monitoring and preparation of assessment reports about SSDS realization, which are submitted to IFAS Executive Committee.

NCDSs (Councils and other bodies, authorized by the government in coordination of sustainable development activities) correspondingly, organize and coordinate the process of SSDS monitoring on the national level. NCSD submits the prepared and agreed assessment report on SSDS realization in the country on the basis of ISDC sustainable development indi-cators.

The initial data are presented to NCSDs by the authorized national bodies.

Assessment reports and SSDS implementation reports include the results of national assessment reports, expert evaluation of NGO representatives and donors, materials and recommendations from regional organizations, based on sustainable development indicators.

ISDC elaborates and agrees on the indicators of SSDS assessment, which are approved by IFAS Executive Committee, with the support of national statistics bodies and regional organizations.



Picture 2. Monitoring and evaluation system

For organization of the process on monitoring and assessment of SSDS implementation it is necessary:

- to harmonize and develop the legislative base, regulating the collection and manage-ment of information on the national and regional level;
- to support and develop institutional structures for regional cooperation on monitoring and information;
- to elaborate and agree on the indicators for evaluation of progress in achievement of purposes and international commitments on sustainable development;
 - to support the creation of regional monitoring system on sustainable development;
- to create the unique information system, including collection, processing, analysis and presentation of information on SD indicators on national and regional levels;
- to improve the quality of information by means of introduction indicators on sustain-able development to the system of country reporting;
- to develop the modern information technologies for assurance of access to the information on SD and its dissemination;
- to improve the interstate coordination between responsible structures, organizations and participants, involved in the process of SSDS monitoring;
- to harmonize the approach on the base of modern geo-informational technologies and methods of assessment, prognosis and modeling for their use by national and regional information databases.

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